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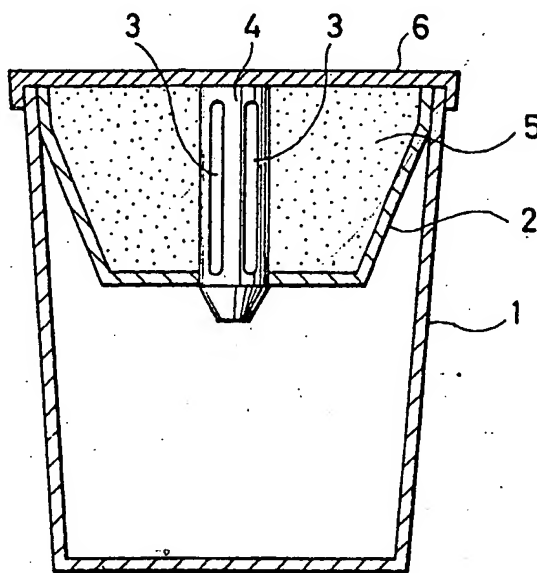
(54) Dehumidifying container

(57) A dehumidifying container comprises an inner container (2) having an opening at its upper end and a bottom portion. The inner container is filled with a dehumidifying agent (5) and has a discharge pipe (4) provided upright at the centre of its bottom portion. The discharge pipe has at least one slit (3) in a wall thereof and an open lower end which protrudes downwardly through the bottom portion of the inner container.

The inner container is detachably fitted into an outer container (1) in such a manner that a space having a predetermined volume is formed between the respective bottom portions of the containers (1, 2).

The dehumidifying agent (5) absorbs moisture from the air and the so formed solution of the agent (5) flows readily through the or each slit (3), out through the open lower end of the tube (4), and into said space. The upper end of the tube (4) is also open to assist such flow.

FIG. 4



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FIG. 1

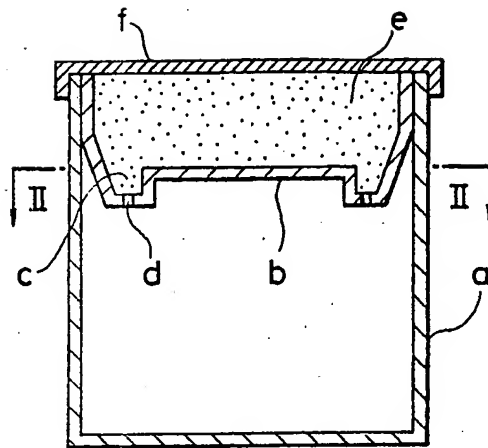


FIG. 2

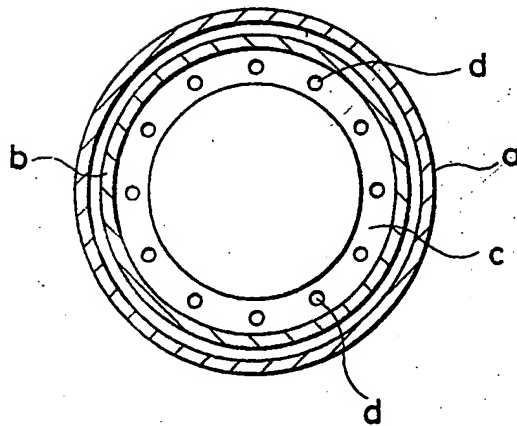


FIG. 3

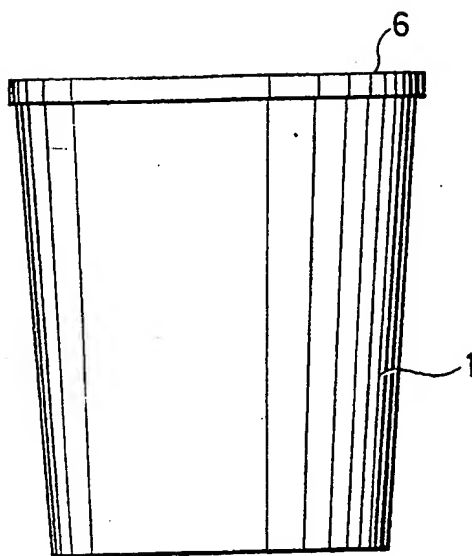


FIG. 4

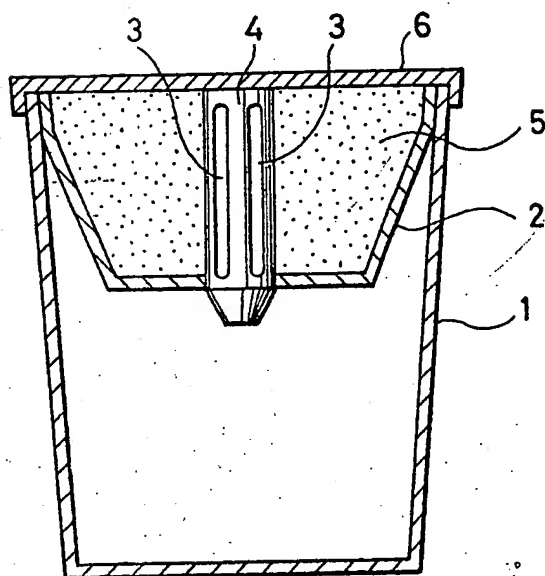
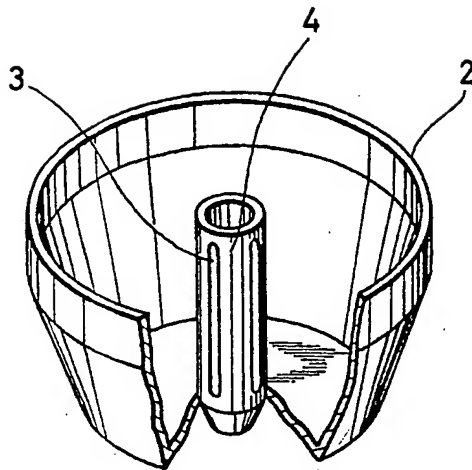


FIG. 5



## SPECIFICATION

## Dehumidifying container

The present invention relates to a dehumidifying container which is intended to be placed in a room, a closet, a wall locker, or the like to absorb moisture in the air therein.

In a conventional dehumidifying container, as shown in Figures 1 and 2, an inner container *b* is fitted in an outer container *a*, and a groove *c* is formed in the periphery of the bottom of the inner container *b*. A plurality of small holes *d* are formed in the groove *c*. Calcium chloride *e*, which fills the inner container *b*, absorbs or catches moisture in the air. The moisture thus caught dissolves the calcium chloride *e* thereby to form a calcium chloride solution. The calcium chloride solution flows through the small holes *d* in the inner container into the outer container *a*, where it gathers as a pool. In Figure 1, reference character *f* designates a cover, which can be fitted on the container *a* to close the container *b* when it is not desired for the dehumidifying container to be in use.

In the conventional dehumidifying container described, the small holes *d* are formed in the bottom of the container *b* in order to allow the calcium chloride *e* solution to drop into the outer container *a*. Therefore, it takes a relatively long time for the calcium chloride solution to reach the small holes *d* from above, and therefore it is rather difficult to catch the calcium chloride solution. Furthermore, since the calcium chloride solution is viscous, it is liable to form a pool in the groove *c*. That is, it is rather difficult to cause the calcium chloride solution to drop through the small holes *d*. This difficulty may be eliminated by increasing the diameter of the small holes. However, this method provides another difficulty that the increase of the diameter of the small holes causes the calcium chloride in the form of powder to drop through the holes.

It is thus an object of the present invention to provide a dehumidifying container in which the disadvantages of the known device are eliminated or at least minimised.

According to the invention there is provided a dehumidifying container comprising an inner container which is formed so as to be filled with a dehumidifying agent, the inner container having a discharge pipe with at least one slit in a wall thereof, the discharge pipe being provided upright from a bottom portion of the inner container and having respective openings at its upper and lower ends, the inner container being detachably fitted into an outer container in such a manner that a space having a predetermined volume is formed between the bottom portion of the inner container and a bottom portion of said outer container.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a sectional side view of a conventional dehumidifying container;

Figure 2 is a sectional view taken along line

65 II—II in Figure 1;

Figure 3 is a side view of one example of a dehumidifying container constructed according to the present invention;

Figure 4 is a vertical sectional view of the dehumidifying container of Figure 3; and

Figure 5 is a perspective view, with a part cut away, of an inner container of the dehumidifying container of Figure 4.

One embodiment of the present invention will now be described with reference to Figures 3 to 5.

As shown in Figures 3 to 5, an inner container 2 in the form of an inverted circular truncated cone is fitted into an outer container 1 made of transparent material, in such a manner that containers 1 and 2 are closed and a space having a predetermined volume is formed between respective bottom portions of the two containers 1 and 2. A discharge pipe 4 open at the top and the bottom is provided upright at the centre of the bottom portion of the inner container 2 in such a manner that it penetrates the bottom portion of the inner container. The pipe 4 has a suitable number of slits 3 of small width cut in its wall along its axis. The top of the pipe 4 is set flush with the upper level, or the open end, of the inner container 2, and the lower end portion of the pipe 4 is tapered downwardly and protrudes downwardly from the bottom portion of the inner container 2. A dehumidifying agent 5, i.e. calcium chloride, fills the inner container 2. In Figure 4, reference numeral 6 designates a cover, which keeps air from the dehumidifying agent 5 when the container is not in use.

In the above-described embodiment, a conventional means is provided in order to prevent the inner container 2 from dropping into the outer container 1. For instance, protrusions may be formed on the inner wall of the outer container to hold the inner container in place. The inner container 2 can be freely engaged with or disengaged from the outer container 1. The dehumidifying container may be so designed that the pipe 4 is fixedly secured to the inner container 2 or is detachably coupled thereto.

The dehumidifying container of the present invention constructed as described above is used as follows. First, the cover 6 is removed, and then the dehumidifying container is placed, for instance, in a closet which is to be dehumidified. The surface of the calcium chloride powder absorbs and catches any moisture in the air, as a result of which it becomes a calcium chloride solution through chemical reaction. The calcium chloride solution flows through the slits 3 into the pipe 4 at the centre of the inner container 2, and drops through the lower end opening of the pipe 4 into the outer container 1, where it forms a pool. In this case, as the pipe 4 is open at its top, dropping of the calcium chloride solution into the container 1 is facilitated. As the calcium chloride solution formed by catching moisture in the air flows continuously into the outer container 1

through the slits 3 of the pipe 4 as described above, the surface of the calcium chloride powder 5 is maintained in contact with the air without being disturbed by the moisture caught.

- 5 The calcium chloride solution in the outer container 1 can be readily discarded by removing the inner container 2 from the outer container 1. Thus, as long as the calcium chloride powder 5 remains in the container, the latter can  
10 dehumidify the air without being disturbed by the moisture caught.

Even if the dehumidifying container were to be accidentally knocked over the solution in the container 1 will never flow out, because the inner  
15 container 2 and the outer container 1 are gas-tightly fitted together and because the pipe 4 is positioned at the centre and the lower end portion of the pipe 4 is conical.

- In the above-described embodiment, the  
20 dehumidifying agent is calcium chloride. However, it will be understood that any dehumidifying agent can be utilized if it is high in moisture absorbing power. Furthermore, although in the above-described embodiment, the slits of the  
25 discharge pipe extend longitudinally, they may be modified into ones in the form of an intermittent spiral line. In addition, the configuration of the container is not limited to that shown. It is obvious that the container may be fabricated from  
30 any material such as synthetic resin or plastics, waterproof paper or metal.

As has been described above, the moisture absorbed from the air flows readily through the slits of the discharge pipe into the outer container,  
35 where it forms a pool. Thus, the dehumidifying container of the present invention has excellent effects in that the period of time during which the caught moisture stays in the inner container 2 is relatively short, and accordingly a new surface of  
40 the dehumidifying agent is exposed at all times, which improves the dehumidifying effect.

#### Claims

1. A dehumidifying container, comprising an inner container having an opening at its upper  
45 end, and a bottom portion, said inner container

being formed so as to be filled with a dehumidifying agent, and having a discharge pipe provided upright from the bottom portion thereof, said discharge pipe having at least one slit in a wall thereof and having respective openings at its upper and lower ends, said inner container being detachably fitted into an outer container in such a manner that a space having a predetermined volume is formed between the bottom portion of  
55 said inner container and a bottom portion of said outer container.

2. A dehumidifying container as claimed in claim 1, wherein said discharge pipe extends from a centre of the bottom portion of said inner  
60 container.

3. A dehumidifying container as claimed in claim 1 or claim 2, wherein said discharge pipe has a plurality of slits in the wall thereof.

4. A dehumidifying container as claimed in claim 1 or claim 2, wherein said slit is in the form of a spiral.  
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5. A dehumidifying container as claimed in any one of the preceding claims, wherein the or each slit extends substantially longitudinally of said  
70 discharge pipe.

6. A dehumidifying container as claimed in any one of the preceding claims, wherein said open lower end of said discharge pipe protrudes downwardly from said bottom portion of said  
75 inner container.

7. A dehumidifying container as claimed in any one of the preceding claims, wherein said discharge pipe is detachably mounted to said bottom portion of said inner container.

8. A dehumidifying container as claimed in any one of the preceding claims, wherein the upper opening of said discharge pipe is flush with an upper peripheral end of said inner container.  
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9. A dehumidifying container as claimed in any one of the preceding claims, wherein the lower end of the discharge pipe is tapered downwardly.

10. A dehumidifying container substantially as hereinbefore described, with reference to, and as shown in Figures 3 to 5 of the accompanying  
90 drawings.